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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,571	08/29/2005	Eric Appelman	118989-05010505	8780

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MAYER, BROWN, ROWE & MAW LLP  
71 South Wacker  
Chicago, IL 60606

EXAMINER
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MATOCHIK, THOMAS L

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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12/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,571	<b>Applicant(s)</b> APPELMAN ET AL.	
	<b>Examiner</b> Thomas Matochik	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/28/2005</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

The disclosure is objected to because of the following informalities: Claims 18 and 19 contain capitalization. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112 and § 101*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 25 provides for the use of epoxy resin composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 25 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 18-19, 25-26 and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Mulhaupt.(US 4,952,645).

**Regarding claims 1 and 2:** Mulhaupt teaches a composition comprising (a) an epoxy resin (col. 3, lines 18-25, formula VI) and (b) a dimer fatty acid (col. 5, lines 15-17). This resin is cured (col. 10, lines 12-23).

**Regarding claims 3, 4:** Mulhaupt teaches the dimer fatty acid component is a polyester (col. 2, line 50, formula II) where  $y=10$  and  $R^3$  = at least 70% dimeric fatty acids (col. 3, lines 18-22).

**Regarding claim 5:** Mulhaupt teaches that the polyester comprises both dimer fatty acids and other dicarboxylic acids (col. 5, lines 15-68), in particular adipic acid col. 5, line 47) where the aliphatic radical is tetramethylene. The preferred diol is butanediol, mw=90 (col. 6, lines 27-33).

**Regarding claim 6:** Mulhaupt teaches that polyamides are used in compositions with epoxy resins (col.1, lines 52-55).

**Regarding claim 7:** Mulhaupt teaches that the dicarboxylic acids in the polyester can be the same or different (col. 3, lines 15-17) meaning that the proper selection of a

mixture of dimeric fatty acids and non-dimeric fatty acids would provide the levels of dimeric fatty acids between 15 and 50% by weight.

**Regarding claims 8-10:** Mulhaupt teaches the composition contains ratios of epoxy resin:polyester of between 100:1 and 4:1. The polyester component is between 1 and 25% by weight (col. 9, lines 30-35). The fatty acid component would then be between 0.7% and 17.5% by weight if it is 70% of the polyester (col.3, lines 19-22).

**Regarding claim 11:** Mulhaupt teaches partial curing to form a prepreg (col. 10, lines 12-23).

**Regarding claims 18 and 19:** Physical properties of the composition are inherent in the composition as claimed. The Office recognizes that all of the claimed effects and physical properties are not positively stated by the reference. Note however, that the reference teaches all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would implicitly be achieved by carrying out the disclosed process. If it is the applicant's position that this would not be the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure in that there is no teaching as to how to obtain the claimed properties and effects by carrying out only these steps.

**Regarding claims 25 and 26:** Mulhaupt teaches the use of the composition as an adhesive (col. 10, lines 46-55).

**Regarding claims 28 and 29:** Mulhaupt teaches that the curing process can be carried out in stages resulting in partial curing (col. 10, lines 12-20) and that other, lower

molecular weight, epoxides i.e. butyl glycidyl ether, can be added to the curable mixture in order to reduce the viscosity (col. 10, lines 25-27).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-17, 20-24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulhaupt as applied to claims 1-11, 18-19, 25-26 and 28-29 above.

**Regarding claim 12:** Mulhaupt does not teach the concentration of impact modifier in the prepreg polymer composition. However, MPEP 2144.05, II, optimization of ranges, states that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

**Regarding claims 13-17 and 21-24:** Mulhaupt does not teach the particle size distribution or aspect ratio of the impact modifier in the prepreg polymer composition. However, MPEP 2144.05, II, optimization of ranges, states that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulhaupt (US 4,952,645) in view of Welke et.al (EP 1 026 218 A1).

**Regarding claim 27:** Mulhaupt teaches the epoxy adhesive used as a laminating resin (col. 10, line 53). Mulhaupt does not teach using the epoxy resin as an adhesive specifically for bonding electronic components to circuit boards. However, Welke teaches the composition is used in the electronics industry to bond electronic components to substrates (§ 0074) which is a laminating process. Milhaupt and Welke are analogous art since they both are from the same field of endeavor, namely epoxy/polyester resin compositions. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Welke with the composition of Mulhaupt to extend the range of applications of the resin composition.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulhaupt (US 4,952,645)

**Regarding claim 20:** Mulhaupt teaches an epoxy resin prepreg composition with an impact modifier (col. 10, lines 15-23). The composition comprises (a) an epoxy resin (col. 3, lines 18-25, formula VI) and (b) a dimer fatty acid (col. 5, lines 15-17). This resin is cured (col. 10, lines 12-23). Mulhaupt does not teach the concentration of impact modifier in the prepreg polymer composition or the amount of dimer fatty acid in the impact modifier. However, MPEP 2144.05, II, optimization of ranges, states that "where

the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Matochik whose telephone number is 571-270-3291. The examiner can normally be reached on Monday-Friday 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TLM  
11/27/2007

  
MARK EASHOO, PH.D.  
SUPERVISORY PATENT EXAMINER

10/ Dec 107